

AMENDMENTS TO THE CLAIMS

Listing of Claims:

1. (Currently Amended) A tray transfer apparatus, comprising:
a transfer plate, the transfer plate including
a plurality of tray holders arranged and configured for the selective support and release of
a tray, the tray including an array of pockets for receiving semiconductor devices;
a detecting substrate including an array of detecting ~~means~~ switches, the array of
detecting ~~means~~ switches arranged and configured to detect the presence of more than one
semiconductor device in one of the pockets of a supported tray by contacting at least one of the
semiconductor devices in one of the pockets;
wiring means connecting the detecting means to an input/output terminal; and
driving means arranged and configured for controlled vertical and horizontal movement
of the transfer plate; and
a control substrate for generating a control signal, the control signal corresponding to an
activation status of the detecting switches.
2. (Cancelled)
3. (Currently Amended) The tray transfer apparatus according to claim-~~2~~ 1, wherein:
the detecting switches are mechanical contact type push-button switches, and
the detecting switches included in the array of ~~detecting means~~ are connected in a parallel
configuration.
4. (Currently Amended) The tray transfer apparatus according to claim-~~2~~ 1, wherein:
the transfer plate includes a top surface, a bottom surface, and an array of installation
holes extending through the transfer plate; and further wherein
the detecting switches extend through the installation holes and below a plane defined by
the bottom surface of the transfer plate.
5. (Previously Presented) The tray transfer apparatus according to claim 4, wherein:

the detecting substrate has an upper surface and a lower surface,
the detecting switches are arranged on the lower surface of the detecting substrate; and
the detecting substrate is mounted on the top surface of the transfer plate, thereby
extending the detecting switches through the installation holes.

6. (Original) The tray transfer apparatus according to claim 5, wherein:
the detecting switches are mounted on the lower surface of the detecting substrate by a
method selected from soldering and friction fit.
7. (Original) The tray transfer apparatus according to claim 1, wherein:
the transfer plate includes a rotatable member arranged at a periphery of the transfer plate
and extending above and below the transfer plate;
a catch finger connected to a lower extension of the rotatable member; and
an actuation means connected to an upper extension of the rotatable member, whereby
the rotatable member may be selectively rotated to move the catch finger between a supporting
position and a releasing position.
8. (Cancelled)
9. (Currently Amended) The tray transfer apparatus according to claim-81, wherein:
the control substrate further includes a flashing circuit arranged and configured to
generate flash signals corresponding to the activation status of the detecting switches.
10. (Original) The tray transfer apparatus according to claim 9, wherein:
the flashing circuit includes a NE555 circuit.
11. (Currently Amended) The tray transfer apparatus according to claim-81, wherein:
the control substrate includes a direct current to alternating current rectifier.
12. (Currently Amended) An automatic test handler comprising:
a plurality of tray stockers arranged and configured for receiving and positioning trays,

the trays including an array of pockets with each pocket being sized and configured to receive and hold a semiconductor device;

a tray transfer unit including a transfer plate arranged and configured to transfer and position a supported tray, and a detecting substrate including an array of detectors, the array of detectors arranged and configured to indicate the presence of more than one semiconductor device in a pocket of the supported tray by contacting at least one of the semiconductor devices in the pocket, and a driver;

a tester for performing electrical tests on the semiconductor devices;

a first chamber for establishing a first temperature condition in the semiconductor devices under which the semiconductor devices will be tested;

a second chamber for restoring the tested semiconductor device to the normal temperature;

a pick and place device arranged and configured for removing the semiconductor devices from the pockets and for placing the semiconductor devices into the pockets; and

a controller for controlling the stockers, the tester, the tray transfer unit, the pick and place device and the first and second chambers; and

a control substrate arranged and configured for providing power to the detecting substrate and for generating flash signals according to an activation status of the detectors.

13. (Original) The automatic test handler according to claim 12, wherein:
the controller is incorporated within the tray transfer unit.

14. (Previously Presented) The automatic test handler of claim 12, wherein:
the controller generates a test stop signal corresponding to the activation status of the detectors.

15. (Previously Presented) The automatic test handler according to claim 12, further comprising:
an alarm for generating an alarm signal corresponding to the activation status of the detectors.

16. (Cancelled)